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Life thrives at Umes

Researchers at the Tasmanian Institute of Agriculture (TIA) have found the ideal temperature for all life to thrive, adding another layer to Darwin's Survival of the Fittest theory.

Lead researcher Dr Ross Corkrey has named this ideal individual temperature 'U_{mes}', pronounced 'yoo-mez'.

"U_{mes} tells us the ideal temperatures for microorganisms – the world's smallest life forms – to thrive," Dr Corkrey said.

This new information could be a game changer, especially in our rapidly warming climate.

"We found that as the temperature increases, natural selection is more likely to favour microorganisms that grow at faster rates," Dr Corkrey said.

"Microorganisms can't control their own temperature, so the conditions they live in are vital for their survival and growth."

Dr Corkrey's team includes microbiologist and PhD candidate Cameron Macdonald, who discovered that U_{mes} is not affected by environmental stressors such as pH and salinity.

"If temperatures are outside the normal range, they can slow a microorganism's growth rate," Mr Macdonald said.

U_{mes} could have massive implications for the future of agriculture, food and much more.

"Our discovery could help us breed tougher vegetable plants to survive climate change," Mr Macdonald said.

"It could help develop food that stays fresher for longer or break down food packaging," he said.

The research involved countless hours analysing and modelling the ideal temperatures and optimal growth rates of thousands of species of microorganisms, totalling almost 20,000 data records.

"The computer modelling alone took six months – each analysis takes two weeks, and we needed to model the data in hundreds of different ways to be sure of what we'd found," Dr Corkrey said.

"This is one of the most exciting discoveries in my 30-year career in science.

"U_{mes} could even help us find life on other planets – the sky is literally the limit," he said.

The research has been published online today, available at:

bit.ly/optimaltemperature.

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